REMARKS

This Amendment is filed in response to the Office Action dated September 6, 2006. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this amendment. The amendment to claim 1 is supported throughout the specification, including paragraphs [0006] and [0007].

Claims 1-20 are pending in this application. Claims 12-19 are withdrawn from consideration, pursuant to a restriction requirement. Claims 1-11 have been rejected. Claim 1 has been amended. New claim 20 has been added.

Claim Rejections Under 35 U.S.C. §§ 102 and 103

Claims 1, 7-9, 10, and 11 were rejected under 35 U.S.C. § 102(e) as anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Arai et al. (U.S. Pat. No. 6, 558,482).

Claims 1-11 were rejected under 35 U.S.C. § 102(b) as anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Kojima et al. (U.S. Pat. No. 6, 235,129).

These rejections are traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a Nd-Fe-B type rare earth magnet alloy for a Nd-Fe-B type anisotropic exchange spring magnet comprising hard magnetic phases and soft magnetic phases. A minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm.

Another aspect of the invention, per claim 20, is a Nd-Fe-B type rare earth magnet alloy for producing a bulk of a Nd-Fe-B type anisotropic exchange spring magnet comprising hard magnetic phases and soft magnetic phases. A minimum width of the soft magnetic phases is

smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm.

The Examiner asserted that Arai et al. teach an Nd-Fe-B type rare earth magnet alloy having a soft magnetic phase and a hard magnetic phase with a grain diameter of the hard and soft phases of 1 to 100 nm that is formed into a 30 micron thick ribbon. The Examiner further asserted that Arai et al. disclose a process of making the alloy that is the same or similar to the process of claims 10 and 11.

The Examiner averred that Kojima et al. teach an Nd-Fe-B type rare earth magnet alloy having a soft magnetic phase and a hard magnetic phase with a grain diameter of the hard and soft phases of 100 nm or less that is formed into a ribbon. The Examiner further asserted that Arai et al. disclose a process of making the alloy that is the same or similar to the process of claims 10 and 11.

The Examiner acknowledged that Arai et al. and Kojima et al. do not disclose the minimum distance between the soft magnetic phases. The Examiner concluded that the invention would have been obvious because the reference has a composition that is encompassed by the instant claims and is made by a process which is similar to, if not the same as, Applicants' process.

Arai et al. and Kojima et al. do not anticipate or suggest the claimed Nd-Fe-B type rare earth magnet alloys and powder of a Nd-Fe-B type rare earth magnet alloy because Arai et al. and Kojima, whether taken alone, or in combination do not suggest a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm, as required by claims 1, 9, and 20.

An important feature of the present invention is that a Nd-Fe-B type rare earth magnet alloy is a material for producing a Nd-Fe-B type anisotropic exchange spring magnet. Further, in

order to produce the Nd-Fe-B type anisotropic exchange spring magnet using the Nd-Fe-B type rare earth magnet, it is necessary that the Nd-Fe-B type rare earth magnet alloy for a Nd-Fe-B type anisotropic exchange spring magnet comprises hard magnetic phases and soft magnetic phases, and that a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm.

As a result of extensive and careful research, the inventors of the present invention succeeded in producing a bulk type Nd-Fe-B anisotropic exchange spring magnet from the Nd-Fe-B type rare earth magnet alloy, and further found that the Nd-Fe-B type rare earth magnet alloy has the feature that a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm, as shown in Fig. 1.

Consequently, the present invention provides a Nd-Fe-B type anisotropic exchange spring magnet having a superior magnetic property based on the magnetic anisotropy of the obtained bulk magnet produced from the Nd-Fe-B type rare earth magnet alloy.

Arai et al. disclose a magnetic powder for an **isotropic** bonded magnet, not an **anisotropic** magnet. Arai et al. do not suggest a magnet alloy for a Nd-Fe-B type anisotropic exchange spring magnet. Since Arai et al. disclose an isotropic bonded magnet there is no reason for the Arai et al. magnet to have a minimum distance between the soft magnetic phases greater than or equal to 0.1 μm in addition to a minimum width of the soft magnetic phases smaller than or equal to 1 μm. Further, the magnet of Arai et al. is a **bonded** magnet, not a **bulk of the anisotropic exchange spring magnet** obtained by a sintering process of the Nd-Fe-B type rare earth magnet alloy. Therefore, the features of the magnet powder is very different from that of the magnet alloy of the present invention.

Arai et al. do not suggest the important features of the present invention, and provide no motivation to provide a minimum distance between the soft magnetic phases to be greater than or equal to 0.1 μm.

Kojima et al. disclose a hard magnetic material for a Sm-Co type magnet, which is a previous-generation magnet relative to the Nd-Fe-B type magnet. Further, the magnetic materials of Kojima et al. include an **amorphous phase** and a fine crystalline phase.

While Kojima et al. merely define an average crystal grain size of a fine crystalline phase and an average grain size of a hard magnetic phase within a range of 100 nm or less, Kojima et al. do not define a minimum width of the soft phase. Rather, Kojima et al. is silent concerning the minimum distance between the soft phases.

Furthermore, the composition of the hard magnetic material for the Sm-Co type magnet of Kojima et al. is different from a composition of the Nd-Fe-B type rare earth magnet alloy for a Nd-Fe-B type anisotropic exchange spring magnet of the present invention.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Arai et al. and Kojima et al. do not disclose a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm and Kojima et al. do not

disclose the composition of the magnet alloy, as required by claims 1, 9, and 20, Arai et al. and Kojima do not anticipate claims 1, 9, and 20.

Applicants further submit that Arai et al. and Kojima et al. do not suggest the claimed Nd-Fe-B type rare earth magnet alloys and powder of a Nd-Fe-B type rare earth magnet alloy.

Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge readily available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365, 1370 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). There is no suggestion in Arai et al. or Kojima et al. to combine Arai et al. and Kojima et al. to achieve a Nd-Fe-B type rare earth magnet alloy wherein a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm, as required by claims 1, 9, and 20.

The mere fact that references can be modified does not render the resulting combination obvious unless the prior art also suggests the desirability of the modification. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Arai et al. and Kojima et al. do not suggest the desirability of modifying the magnet alloys of Arai et al. and Kojima et al. to achieve a Nd-Fe-B type rare earth magnet alloy wherein a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm, as required by claims 1, 9, and 20.

The requisite motivation to support the ultimate legal conclusion of obviousness under 35 U.S.C. § 103 is not an abstract concept, but must stem from the applied prior art as a whole and

realistically impel one having ordinary skill in the art to modify a specific reference in a specific manner to arrive at a specifically claimed invention. *In re Deuel*, 51 F.3d 1552, 34 USPQ2d 1210 (Fed. Cir. 1995); *In re Newell*, 891 F.2d 899, 13 USPQ2d 1248 (Fed. Cir. 1989). Accordingly, the Examiner is charged with the initial burden of identifying a source in the applied prior art for the requisite realistic motivation. *Smiths Industries Medical System v. Vital Signs, Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999); *In re Mayne*, 104 F.3d 1339, 41 USPQ2d 1449 (Fed. Cir. 1997). There is no motivation in Arai et al. and Kojima et al. to modify the magnet alloys of Arai et al. and Kojima et al. to achieve a Nd-Fe-B type rare earth magnet alloy wherein a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm, as required by claims 1, 9, and 20.

The only teaching of the a Nd-Fe-B type rare earth magnet alloy wherein a minimum width of the soft magnetic phases is smaller than or equal to 1 μm and a minimum distance between the soft magnetic phases is greater than or equal to 0.1 μm is found in Applicants' disclosure. However, the teaching or suggestion to make a claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The motivation for modifying the prior art must come from the prior art and must be based on facts.

The dependent claims are allowable for at least the same reasons as the respective independent claims from which they depend and further distinguish the claimed Nd-Fe-B type rare earth magnet alloy and powder of a Nd-Fe-B type rare earth magnet alloy.

In light of the above Amendment and Remarks, this application should be allowed and the case passed to issue. If there are any questions regarding these remarks or the application in

general, a telephone call to the undersigned would be appreciated to expedite prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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